



Maryland Vital Statistics

Infant Mortality in Maryland, 2013

September 2014

FAST FACTS

- Maryland's infant mortality rate in 2013 was 6.6 per 1,000 live births, a 5% increase from the 2012 rate of 6.3.

- The infant mortality rate increased by 10% between 2012 and 2013 among white infants, and 2% among black infants.

- The neonatal mortality rate fell by 4% and the postneonatal mortality rate increased by 31% between 2012 and 2013. This was due, in part, to a shifting of deaths due to congenital abnormalities from the neonatal to the postneonatal period.

- The leading causes of infant death were low birth weight, congenital abnormalities, SIDS, maternal complications of pregnancy, and complications of the placenta, cord and membranes.

- Despite the increase in the infant mortality rate between 2012 and 2013, the average infant mortality rate has fallen by 15% in Maryland over the past decade, with a 20% decline in the average rate among white infants and a 14% decline among black infants. Both neonatal and postneonatal mortality rates have fallen substantially.

Trends

The infant mortality rate in Maryland was 6.6 per 1,000 live births in 2013, a 5% increase over the rate of 6.3 in 2012. Despite this single year increase, infant mortality rates in Maryland have fallen substantially over the past decade from an average of 7.9 per 1,000 live births in the years 2004-2008 to an average of 6.7 per 1,000 live births in the years 2009-2013. This 15% decline was statistically significant.

A total of 473 infants died in 2013 compared with 458 in 2012. There were 189 deaths among infants born to white women, 250 deaths among infants born to black women, 18 deaths among infants born to Asian women, and 48 deaths among infants born to Hispanic

Table 1. Infant, Neonatal and Postneonatal Mortality Rates* for Selected Years, Maryland.

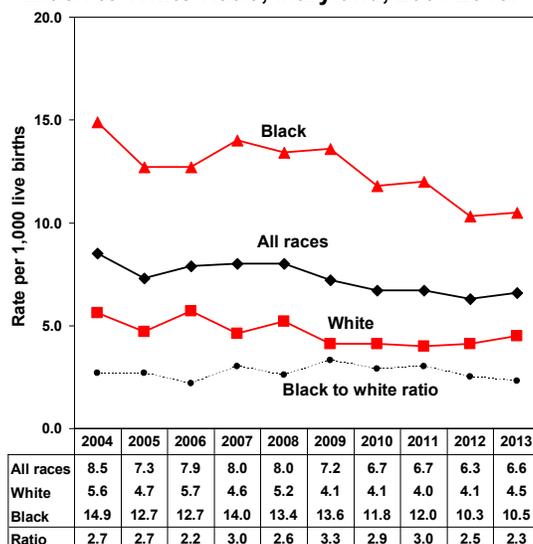
	Rate* by year		Average rate*	
	2012	2013	2004-08	2009-13
Infant mortality				
All races**	6.3	6.6	7.9	6.7 ***
White	4.1	4.5	5.1	4.1 ***
Black	10.3	10.5	13.6	11.7 ***
Neonatal mortality				
All races**	4.7	4.5	5.7	4.8 ***
White	3.0	3.1	3.7	3.0 ***
Black	7.8	7.3	9.8	8.4 ***
Postneonatal mortality				
All races**	1.6	2.1	2.2	1.9 ***
White	1.1	1.4	1.5	1.2 ***
Black	2.5	3.1	3.7	3.2 ***

*Per 1,000 live births

**Includes races other than White and Black

***Rates for 2004-2008 and 2009-2013 differ significantly (p<.05)

Figure A. Infant Mortality Rates by Race and Black to White Ratio, Maryland, 2004-2013.



women, who may be any race.

The increase in the overall infant mortality rate between 2012 and 2013 was mainly the result of a 10% increase in the white infant mortality rate, which rose from 4.1 in 2012 to 4.5 in 2013. The rate increased by 2% among black infants, from 10.3 to 10.5. Despite these one year increases, there have been statistically significant declines in infant mortality rates among both racial groups over the past decade; between the years 2004-2008 and 2009-2013 the average rate fell by 20% among whites and by 14% among blacks. (Table 1).

Age at Time of Death

The neonatal mortality rate (deaths to infants under 28 days of age per 1,000 live births) fell from 4.7 in 2012 to 4.5 in 2013, a 4% decline (Table 1). The rate fell by 6% among black infants, from 7.8 to 7.3, but showed little change among white infants. In contrast, the postneonatal mortality rate (deaths from 28 days through 11 months of age per 1,000 live births) increased by 31% overall, 27% among white infants, and 24% among black infants

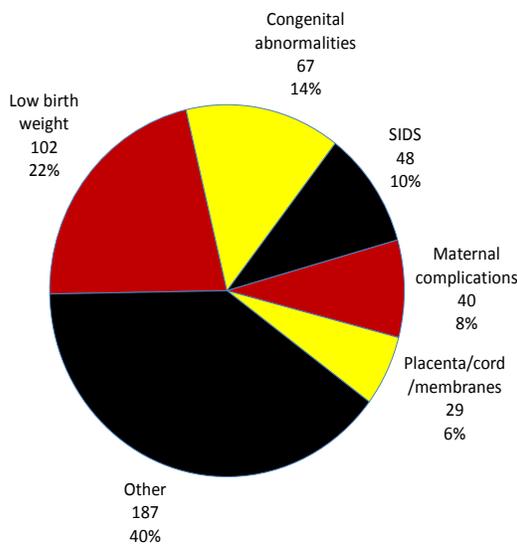
between 2012 and 2013 (Table 1). Again, despite these one year increases, both neonatal and postneonatal mortality rates have shown statistically significant declines over the past 10 years. Between 2004-2008 and 2009-2013, the average neonatal mortality rate declined by 16% overall, 19% among white infants, and 14% among black infants. Postneonatal mortality rates showed similar declines, falling by 14% overall, 20% among white infants, and 14% among black infants.

Causes of death

The leading causes of infant death in 2013 were disorders relating to short gestation and unspecified low birth weight (“LBW”); congenital malformations, deformations, and chromosomal abnormalities (“congenital abnormalities”); Sudden Infant Death Syndrome (“SIDS”); maternal complications of pregnancy; and complications of the placenta, cord and membranes. Maternal complications of pregnancy include conditions such as premature rupture of membranes and cervical incompetence. (Figure B). Low birth weight was the leading cause of death for both white and black infants, followed by congenital abnormalities for white infants and SIDS for black infants.

No single cause of death was responsible for the rise in the number of infant deaths between 2012 and 2013,

Figure B. Leading Causes of Infant Death, Maryland, 2013.



rather, there were small increases in the number of deaths from all leading causes except LBW, which fell by 19% and congenital anomalies which fell by 3%. The decline in deaths resulting from LBW followed statistically significant declines in the number of infants with birth weights between 1000 and 1499 grams, the number of infants born between 28 and 36 weeks gestation, and multiple gestation births.

Although the overall number of deaths resulting from congenital abnormalities fell slightly between 2012 and 2013, the number of postneonatal deaths increased while the number of neonatal deaths declined. The number of deaths occurring in the postneonatal period increased from 16 to 31, a statistically significant increase, while the number of neonatal deaths decreased from 54 to 36. Similar patterns were seen for black and white infants. These changes appeared to be due, in part, to a shifting in the time of death of infants dying as a result of chromosomal abnormalities. Although the total number of deaths resulting from chromosomal abnormalities was similar by year (15 in 2012 and 12 in 2013), the majority of these deaths occurred in the neonatal period in 2012 and in the postneonatal period in 2013.

The leading causes of neonatal mortality in 2013 were LBW, maternal complications of pregnancy, and congenital abnormalities. SIDS and congenital abnormalities were the leading causes of postneonatal mortality.

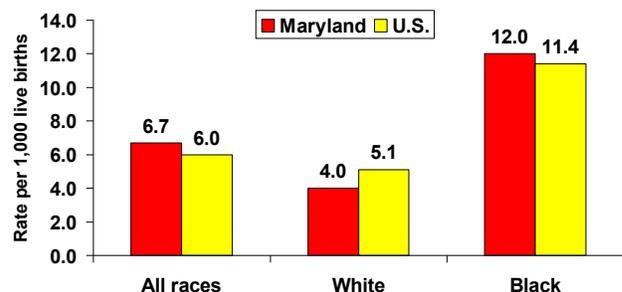
Cause-specific mortality rates continue to be higher for black infants than white infants for nearly all leading causes of death. Compared with white infants, black infants were four times more likely to die in 2013 as a result of SIDS, three times more likely to die as a result of LBW, and twice as likely to die from congenital abnormalities or maternal complications of pregnancy.

Comparison of rates in Maryland and the U.S.

Maryland’s infant mortality rate for all races combined has historically been higher than the national rate, mainly because the Maryland population is comprised of a higher proportion of black residents, a group with generally higher infant mortality rates than whites. White infant mortality rates have generally been lower in Maryland than in the nation. Black rates have been higher in Maryland than nationally in recent years, although the gap has been closing.

Figure C shows a comparison of infant mortality rates in Maryland and the U.S. in 2011, the most recent year for which preliminary national data are available.

Figure C. Infant Mortality Rates by Race, Maryland and the U.S., 2011.



Regional and county differences

The number of infant deaths and infant mortality rates by race, region and political subdivision for 2012 and 2013 are shown in Table 2. Although infant mortality rates increased in a number of areas of the State between 2012 and 2013, the only statistically significant change occurred among white infants in Charles County, where there was one infant death in 2012 and seven in 2013. Despite this one year increase, the average infant mortality rate in Charles County has fallen by 32% over the past decade.

There have also been statistically significant declines in the

average infant mortality rate in all regions of the State except the Eastern Shore area, where the average rate increased by 8% between 2004-2008 and 2009-2013. Average rates have increased in all counties in this region with the exception of Dorchester and Somerset Counties. In contrast, statistically significant improvements have occurred over the past decade in a number of other counties throughout Maryland, including Anne Arundel, Baltimore, Charles, Frederick, Montgomery, Prince George's, and St. Mary's Counties. (Table 3).

TABLE 2. INFANT DEATHS AND INFANT MORTALITY RATES BY RACE, REGION AND POLITICAL SUBDIVISION, MARYLAND, 2012 AND 2013.

Region and political subdivision	ALL RACES				WHITE				BLACK			
	Number of infant deaths		Infant mortality rate*		Number of infant deaths		Infant mortality rate*		Number of infant deaths		Infant mortality rate*	
	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013
Maryland	458	473	6.3	6.6	174	189	4.1	4.5	251	250	10.3	10.5
Northwest Area	21	31	3.8	5.7	16	19	3.4	4.1	5	10	9.1	18.2
Garrett	0	3	**	**	0	2	**	**	0	0	**	**
Allegany	2	6	**	8.9	2	4	**	**	0	2	**	**
Washington	7	9	4.0	5.3	4	4	**	**	3	5	**	22.5
Frederick	12	13	4.4	4.8	10	9	4.4	4.0	2	3	**	**
Baltimore Metro Area	220	227	6.6	6.9	81	94	4.2	4.9	124	123	11.0	11.2
Baltimore City	88	91	9.7	10.3	10	20	3.4	6.8	73	69	12.6	12.5
Baltimore County	51	61	5.3	6.4	19	31	3.3	5.6	29	25	9.5	8.2
Anne Arundel	44	38	6.4	5.6	29	23	5.5	4.4	11	13	9.0	10.5
Carroll	6	7	3.7	4.5	6	6	4.0	4.1	0	1	**	**
Howard	17	16	4.9	4.7	10	6	5.1	3.1	4	9	**	13.4
Harford	14	14	5.3	5.2	7	8	3.3	3.8	7	6	17.1	13.0
National Capital Area	169	152	6.8	6.1	59	45	4.9	3.7	92	89	9.0	8.7
Montgomery	66	61	5.1	4.7	34	26	4.2	3.2	23	27	8.2	9.6
Prince George's	103	91	8.6	7.7	25	19	6.4	4.9	69	62	9.3	8.4
Southern Area	15	24	3.6	5.9	7	11	2.5	4.0	8	11	6.6	9.4
Calvert	4	2	**	**	4	0	**	**	0	2	**	**
Charles	7	14	3.6	7.8	1	7	**	8.0 ***	6	6	6.7	7.2
Saint Mary's	4	8	**	5.9	2	4	**	**	2	3	**	**
Eastern Shore Area	33	39	6.9	8.3	11	20	3.0	5.6	22	17	21.0	17.0
Cecil	4	7	**	6.3	3	5	**	4.9	1	2	**	**
Kent	1	3	**	**	0	1	**	**	1	2	**	**
Queen Anne's	2	3	**	**	0	3	**	**	2	0	**	**
Caroline	5	4	13.6	**	4	3	**	**	1	0	**	**
Talbot	1	2	**	**	0	0	**	**	1	2	**	**
Dorchester	3	3	**	**	0	2	**	**	3	1	**	**
Wicomico	13	12	10.8	10.3	2	2	**	**	11	9	24.8	22.8
Somerset	2	2	**	**	1	2	**	**	1	0	**	**
Worcester	2	3	**	**	1	2	**	**	1	1	**	**

*Per 1,000 live births

**Rates based on <5 deaths are not presented since rates based on small numbers are statistically unreliable.

***Rates for 2012 and 2013 differ significantly (p<.05).

TABLE 3. NUMBER OF INFANT DEATHS, AVERAGE INFANT MORTALITY RATE BY FIVE YEAR INTERVAL AND PERCENT CHANGE IN RATES BETWEEN INTERVALS BY REGION AND POLITICAL SUBDIVISION, MARYLAND, 2004-2008 AND 2009-2013.

Region and political subdivision	Number of infant deaths		Average infant mortality rate*		Percent change**
	2004-2008	2009-2013	2004-2008	2009-2013	
Maryland	3031	2461	7.9	6.7	-15.3 ***
Northwest Area	168	125	5.7	4.5	-21.2 ***
Garrett	6	7	3.9	4.8	21.6
Allegany	27	19	8.0	5.4	-31.6
Washington	49	44	5.3	5.1	-5.2
Frederick	86	55	5.7	3.9	-30.7 ***
Baltimore Metro Area	1418	1185	8.2	7.1	-13.1 ***
Baltimore City	574	498	12.0	11.0	-8.1
Baltimore County	372	313	7.5	6.4	-14.6 ***
Anne Arundel	252	185	7.2	5.3	-26.1 ***
Carroll	35	32	3.7	4.1	9.0
Howard	98	95	5.7	5.6	-2.2
Harford	87	62	5.8	4.6	-21.5
National Capital Area	1085	852	8.3	6.7	-18.5 ***
Montgomery	436	327	6.4	5.0	-22.2 ***
Prince George's	649	525	10.3	8.7	-15.9 ***
Southern Area	174	112	8.0	5.4	-33.1 ***
Calvert	30	20	6.1	4.3	-28.5
Charles	88	58	9.2	6.3	-31.5 ***
St. Mary's	56	34	7.7	4.8	-38.2 ***
Eastern Shore Area	186	187	7.1	7.6	7.9
Cecil	28	32	4.4	5.5	26.2
Kent	5	8	5.2	8.9	72.3
Queen Anne's	15	15	5.7	6.3	11.3
Caroline	15	18	6.4	8.8	36.4
Talbot	7	12	3.8	7.1	89.3
Dorchester	29	20	14.8	10.4	-29.9
Wicomico	55	54	8.6	8.7	1.0
Somerset	18	11	13.5	8.3	-38.2
Worcester	14	17	5.9	7.7	31.0

*Per 1000 live births.

**Percent change is based on the exact rates and not the rounded rates presented here.

***Rates for 2004-2008 and 2009-2013 differ significantly ($p < .05$).



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Vital Statistics Administration**

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